

10. The force and location imaging touch pad of claim 9, wherein the first layer comprises a flexible circuit board.

11. The force and location imaging touch pad of claim 9, wherein the first layer comprises one or more layers of thermoplastic resin.

12. The force and location imaging touch pad of claim 9, wherein the first plurality of conductive traces and the second plurality of conductive traces are substantially orthogonal.

13. The force and location imaging touch pad of claim 9, wherein the second layer comprises a flexible circuit board.

14. The force and location imaging touch pad of claim 9, wherein the second layer comprises one or more layers of thermoplastic resin.

15. The force and location imaging touch pad of claim 9, wherein the first deformable membrane comprises a first plurality of raised structures, the second deformable membrane comprises a second plurality of raised structures and the first and second raised structures are substantially spatially offset from one another.

16. The force and location imaging touch pad of claim 15, wherein the first and second plurality of raised structures comprise thermoplastic resin.

17. The force and location imaging touch pad of claim 9, wherein the first deformable membrane comprises a first plurality deformable beads, the second deformable membrane comprises a second plurality of deformable beads and the first and second plurality of deformable beads are substantially spatially offset from one another.

18. The force and location imaging touch pad of claim 17, wherein the deformable beads comprise elastomer beads.

19. The force and location imaging touch pad of claim 9, wherein each of the first and second plurality of raised structures comprise one or more thermoplastic springs.

20. The force and location imaging touch pad of claim 19, wherein the thermoplastic springs comprise Polyethylene terephthalate.

21. The force and location imaging touch pad of claim 9, further comprising a mutual capacitance measurement circuit electrically coupled to the first, second and third plurality of conductive traces.

22. A force and location imaging touch pad, comprising:

- a first surface having a first plurality of conductive traces oriented in a first direction;
- a second surface having a second plurality of conductive traces oriented in a second direction, the first and second surfaces juxtaposed to and electrically isolated from one another;
- a third surface having a third plurality of conductive traces oriented in substantially the first direction; and
- a deformable membrane between the second and third layers,

wherein the first and second plurality of conductive traces are adapted to create a first capacitance image when one or more objects come into close proximity to the first surface, the first capacitance image indicative of where the one or more objects are located relative to the first surface,

wherein the second and third plurality of conductive traces are adapted to create a second capacitance image

when a force is applied to the first surface, the second capacitance image indicative of an intensity of the applied force.

23. The force and location imaging touch pad of claim 22, wherein the first and second surfaces are surfaces of a common layer.

24. The force and location imaging touch pad of claim 23, wherein the common layer comprises a flexible circuit board.

25. The force and location imaging touch pad of claim 23, wherein the common layer comprises one or more layers of thermoplastic resin.

26. The force and location imaging touch pad of claim 22, wherein the first plurality of conductive traces and the second plurality of conductive traces are substantially orthogonal.

27. The force and location imaging touch pad of claim 22, wherein the third surface comprises thermoplastic resin.

28. The force and location imaging touch pad of claim 22, wherein the deformable membrane comprises:

- a substantially flat membrane having a first surface oriented toward the first plurality of conductive traces and a second surface oriented toward the third plurality of conductive traces;

- a first plurality of raised structures coupled to the first surface of the substantially flat membrane; and

- a second plurality of raised structures coupled to the second surface of the substantially flat membrane, wherein the second plurality of raised structures are substantially spatially offset from the first plurality of raised structures.

29. The force and location imaging touch pad of claim 22, wherein the deformable membrane comprises:

- a substantially flat membrane; and

- a plurality of deformable beads affixed to one surface of the substantially flat membrane, wherein the deformable beads are adapted to compress when a force is applied to the first layer toward the second layer.

30. The force and location imaging touch pad of claim 22, wherein the deformable membrane comprises a dimpled deformable membrane.

31. The force and location imaging touch pad of claim 29, wherein the deformable beads comprise polymer.

32. The force and location imaging touch pad of claim 22, wherein the deformable membrane comprises one or more thermoplastic springs.

33. The force and location imaging touch pad of claim 32, wherein the thermoplastic springs comprise Polyethylene terephthalate.

34. The force and location imaging touch pad of claim 22, further comprising a mutual capacitance measurement circuit electrically coupled to the first, second and third plurality of conductive traces.

35. An electronic device, comprising:

- a processing unit;

- a display unit operatively coupled to the processing unit;

- a mutual capacitance measurement circuit operatively coupled to the processing unit; and